

GetConnected

SAE
2012
World Congress

The Essential Automotive Technology Event



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ELECTRONICS & ELECTRICAL SYSTEMS

Connected Vehicle

- Smart Grid Technologies
- EV Infrastructure
- Telematics
- Intelligent Transportation Systems

Virtual Engineering

Testing & Instrumentation

- Component Level Testing
- Computational Fluid Dynamics
- Controller System Software Testing & Validation
- Data Transfer and Storage Computer Applications
- Duty Cycle Measurement Strategies
- Hardware Innovations
- New Laboratory Test Methods
- On-board Instrumentation
- On-road Field Test Results
- Optimization
- Simulation
- Software/Hardware Systems
- Test Information Management

Electrical & Electronic Systems

- Electrical Wiring Harnesses
- Advanced Electronics Packaging
- Electronics Reliability & Systems Reliability
- Electromagnetic Compatibility (EMC)
- In-Vehicle Networks
- Model-Based Engineering
- Multi-Media Systems
- Safety Critical Systems
- Systems Engineering
- Vehicle Sensors & Actuators
- Vehicle Information
- Vehicle Navigation and Communication Security

ENVIRONMENT / EMISSIONS / SUSTAINABILITY

EMISSION CONTROL TECHNOLOGY

- Advanced Catalyst Technology
- Cold Start Emissions Control Technologies
- Diesel Exhaust Emission Control
 - DPF Substrates & Systems, Durability, HC-DeNOx, Modeling, New Developments, SCR

- Emissions Measurement & Testing
- Emissions Processes for SI Engines
- Particulate Emissions from Direct Injection Gasoline Engines

- Gas Direct Injection Aftertreatment
- Lean NOx Catalysts
- LEV and ULEV Emissions
- Non-Thermal Plasma Aftertreatment
- Substrate Technology
- Surface Engineering & Tribology

THERMAL MANAGEMENT SYSTEMS

- Climate Control
- Thermal Systems Components
- Thermal Systems Modeling & Simulation
- Energy Efficiency of Thermal Systems

SUSTAINABILITY MOBILITY

Connected Vehicle

- Intelligent Highways & Guidance Systems

Vehicle Electrification

- Battery Recycling / Reuse
- Minimize Impact of Personal Transportation on Economics, Society & Environment
- Tools of the Trade - Lifecycle Analysis

End of Life Management; Reuse - Remanufacture - Recycle

- Green Design & Manufacturing
- Vehicle Ownership/Usage Alternatives (shared ownership, renting, etc)

New Concepts in Emission Reduction

- Vehicular Emissions Reduction
- GHG Emissions Reduction
- Alternative or Bio Fuels and Additives
- Non-Combustion Powertrains (electric/compressed air/etc)

New Concepts in Traffic Morbidity Reduction

- Integration of Transportation Systems into Urban Environments
- Traffic Noise Reduction
- Pedestrian Safety

Big Ideas in Personal Transportation in an Era of Mega-Cities

- Integrated Personal Transportation and Mass Transit Systems
- Designing Local and Regional Transit Systems

MATERIALS

Ferrous

- Achieving Lightweight Vehicles
- Applications for High Strength Steel Bar & Microalloyed Forgings
- Castings
- Coated Materials
- Fatigue Research & Applications
- Joining & Welding
- Stamping Technology

Non-Ferrous

- Aluminum Applications
- Magnesium
- Vehicles Structures & Applications
- Zinc Alloys

Materials Modeling & Testing

- Welding & Joining & Fastening
- Modeling of Materials for Crash Applications
- Crankshaft Analysis, Design & Testing
- Experiments in Automotive Engineering
- Load Simulation and Analysis in Automotive Engineering
- Stir Welding

Polymers & Coatings

- Bumper Systems
- Painting Coatings
- Components
- Elastomers & Plastics for Fuels, Oils & Fluids
- Exterior Body Panels
- Instrument Panels
- Interior Trim
- Non-Engine VOC
- Plastics Recycling
- Composites
- Gaskets
- Seating
- SMC Developments
- Window Encapsulation
- Nanotechnology for Automotive Applications
- Solar Panels

Powder Metallurgy

MOTORSPORTS

- Materials

INTEGRATED DESIGN AND MANUFACTURING

Virtual Engineering

- E-manufacturing
- Accelerated Testing and Vehicle Reliability
- OEM Global Supply Chain
- Aftermarket Supply Chain
- Reliability & Robust Design in Automotive Engineering

- Axiomatic Design
- Design for Six Sigma
- Design for Manufacturing
- Six Sigma
- Reliability Testing and DOE
- Modeling & Validation
- Lean Manufacturing for the Mobility Industry
- Concurrent Engineering

PROPULSION/POWERTRAIN

Vehicle Electrification

- Advanced Hybrid Vehicle Powertrains
- Fuel Cell Power Systems
- EV Powertrains
- Advanced Batteries

Fuel & Additive Effects on Fuels

- Alternative and Advanced Fuels
- Fuel Injection & Sprays
- Fuel & Additive Effects on CI Engine Performance
- Fuel & Additive Effects on SI Engine Performance

Compression Ignition Engines

- CI Engine Modeling
- Cold Start & Transients
- Mixing Controlled (Diesel) Combustion
- In-Cylinder Diesel Particulate & NOx Control
- New Diesel Engines & Components
- Lubricant Diagnosis and Management Systems

Spark Ignition Engines

- SI Engine Modeling
- Direct Injection SI Engine Technology
- New SI Engine & Component Design
- In-Cylinder SI Particulate & NOx Control
- Two-Stroke Engines
- Rotary Engines
- SI Combustion

Kinetically Controlled CI Combustion (HCCI)

- Engine Components and Subsystems
 - Advanced Turbochargers & Power Boost
 - Engine Breathing Systems
 - Power Cylinder Systems
 - Variable Valve Actuation Systems
 - Electronic Engine Controls
 - OBD

Natural Gas Engines and Vehicles

Hydrogen IC Engines

Transmissions & Drivelines

- Clutch Systems & Controls
- Gear Systems & Driveline
- Launch Devices
- New Transmission Systems
- Hybrid Transmissions
- CVT/IVT
- Transmission & Driveline NVH

Engine Flows and Combustion Diagnostics

- In-Cylinder Velocity Measurements
- Heat Transfer and Advances in Thermal & Fluid Sciences

Multi-Dimensional Modeling

- Vehicle & Engine Systems Analysis & Modeling
- Military Vehicle Technology
 - Advanced Propulsion System Technology

SAFETY / TESTING

SAFETY

Connected Vehicle

- V2V/V2I Safety Applications

Active Safety

- Lane Departure Warning/Lane Keeping Assistance
- Collision & Blindspot Warning
- Active Pedestrian Protection
- Backover Protection
- Collision Imminent Braking
- Collision Avoidance

Occupant Protection

- Air Bag/Suppression
- Belt Restraints
- Child Passenger Restraints
- Biomechanics
- Pedestrian Safety
- Integrated Safety Systems
- CAE Methods in Crash Safety Applications
- Occupant Safety
 - Rollover
 - Rear & Side Impact
 - Accident Reconstruction
 - Event Data Recorders

- Computer Applications for Crashworthiness
- Vehicle Aggressivity & Compatibility in Crashes
- Safety Test Methodology
- Safety Critical Systems
- Collision Avoidance
- Pre-crash sensing

Fire Safety

- Fire Statistics & Analysis
- Material Flammability & Fire Experiments
- Underhood and Electrical Fires
- Hydrogen Vehicle Fire Safety
- Suppression Systems

BODY ENGINEERING

CAD/CAM/CAE

- Design Simulation & Design Tools
- Digital Modeling
- Rapid Prototyping
- Virtual Development

Body Design & Engineering

Design Optimization: Methods & Applications

Body Structures

Corrosion Prevention

Digital Human Modeling

Glass Applications

Human Factors:

- Seating
- Vision and Visibility
- Comfort
- Mobility
- Telematics

Lighting Technology

Aerodynamics

Wiper Systems

CHASSIS TECHNOLOGY

Braking

- ABS/Controls
- Brake NVH
- Braking Dynamics
- Brake Systems for Alternative Powertrains
- Actuation Systems with No/Low Vacuum
- Stability Control
- Foundation Brake
- Simulation/Modeling
- Stopping Distance Optimization
- Testing

Noise, Vibration & Harshness (NVH)

- Engine/Powertrain
- Intake/Exhaust
- Vehicle Interior Comfort
- Chassis
- Aeroacoustics
- Advanced Applications

Steering, Chassis & Suspension

- Steering/Suspension Components & Systems

Tires & Wheels

- Component design/test technologies
- Simulation/modeling
- Testing and performance evaluation
- Ride
- Wheel Finishing

Vehicle Dynamics and Simulation

- Passive/active
- Stability control systems
- Simulation and modeling

Military Vehicle Technology

- Vehicle and Human Modeling and Simulation

MOTORSPORTS

- Safety
- Vehicle/Chassis
- Tires
- Testing/Simulation
- Aerodynamics
- Powertrain
- Fuels & Lubricants
- Materials
- Green Motorsports
- Alternative Energy Systems & Sources

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Deadline for submitting paper offers June 1, 2011
Review Ready Manuscripts due to session organizers..... September 30, 2011
Final Manuscripts due to SAE.....January 18, 2012